Library Sequence Search History


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DICTIONARY FILE UPDATES:  25 JUN 2006  HIGHEST RN 889359-45-9

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*********************************************************************
*                                                                   *
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added,   *
* effective March 20, 2005.  A new display format, IDERL, is now    *
* available and contains the CA role and document type information. *
*                                                                   *
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L1   ANSWER 1 OF 2  REGISTRY  COPYRIGHT 2006 ACS on STN
RN   620973-82-2  REGISTRY
CN   L-Glutamic acid, L-phenylalanyl-L-lysylglycyl-L-α-glutamyl-L-
     glutaminyl-L-alanyl-L-prolyl-L-lysylglycyl- (9CI)  (CA INDEX NAME)
OTHER NAMES:
CN   2: PN: CN1386754 SEQID: 2 claimed sequence
FS   PROTEIN SEQUENCE; STEREOSEARCH
SQL  10

PATENT ANNOTATIONS (PNTE):
Sequence |Patent
Source   |Reference
=========+==========
Not Given|CN1386754
         |claimed
         |SEQID 2


SEQ      1 FKGEQAPKGE
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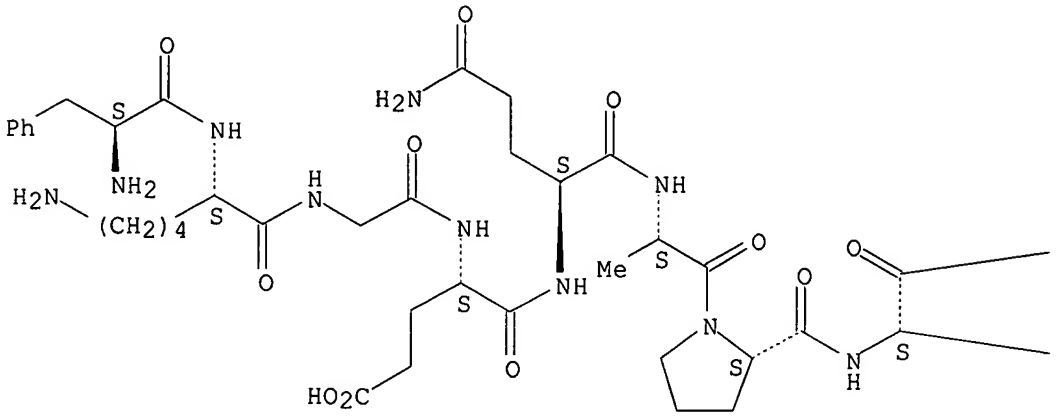
HITS AT: 1-10
MF C48 H75 N13 O16
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER
DT.CA CAplus document type: Journal; Patent
RL.P Roles from patents: BIOL (Biological study); PRP (Properties); USES (Uses)
RL.NP Roles from non-patents: BIOL (Biological study); PRP (Properties)

Absolute stereochemistry.

PAGE 1-A



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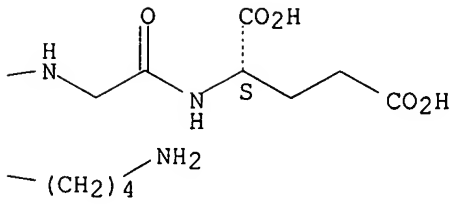

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3 REFERENCES IN FILE CA (1907 TO DATE)
3 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 143:76700

REFERENCE 2: 140:281378

REFERENCE 3: 139:363392

L1 ANSWER 2 OF 2 REGISTRY COPYRIGHT 2006 ACS on STN
RN 211099-13-7 REGISTRY
CN L-Proline, L-alanylglycyl-L-phenylalanyl-L-lysylglycyl-L-α-glutamyl-L-glutaminyl-L-alanyl-L-prolyl-L-lysylglycyl-L-α-glutamyl- (9CI) (CA INDEX NAME)
FS PROTEIN SEQUENCE; STEREOSEARCH
SQL 13

SEQ 1 AGFKGEQAPK GEP
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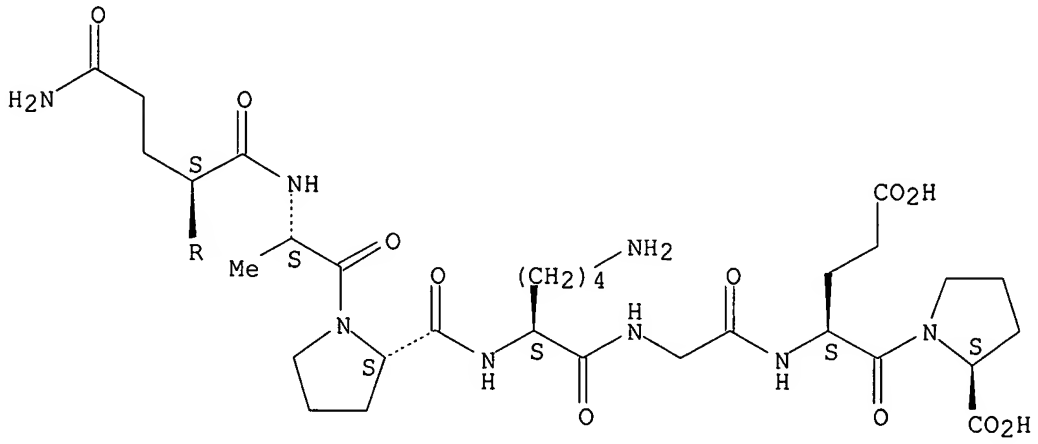
HITS AT: 3-12
MF C58 H90 N16 O19
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER
DT.CA CAplus document type: Journal
RL.NP Roles from non-patents: PRP (Properties)

Absolute stereochemistry.

PAGE 1-A



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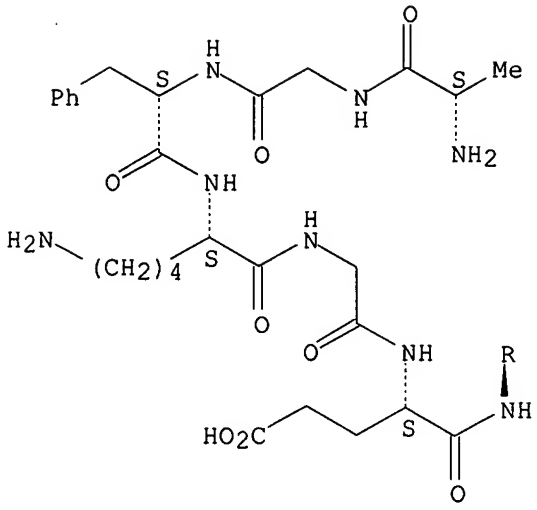

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 129:160544

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L2 0 S L1

FILE 'USPATFULL' ENTERED AT 07:54:46 ON 26 JUN 2006
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FILE 'HCAPLUS' ENTERED AT 07:54:49 ON 26 JUN 2006
L4 4 S L1
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L6 1 S L4 AND (WO2003-CN496 OR CN2002-123412)/AP,PRN
L7 4 S L4-L6

FILE 'REGISTRY' ENTERED AT 07:56:20 ON 26 JUN 2006

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FILE COVERS 1907 - 26 Jun 2006 VOL 145 ISS 1
FILE LAST UPDATED: 25 Jun 2006 (20060625/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

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L7 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:352633 HCAPLUS
DN 143:76700
ED Entered STN: 25 Apr 2005
TI The inhibitory effect of altered collagen II peptide on HLA-DRB1-restricted T-cell activation
AU Cheng, Y. J.; Zhou, Q.; **Li, Z. G.**
CS Department of Rheumatology & Immunology, People's Hospital, Peking University Medical School, Beijing, Peop. Rep. China
SO Scandinavian Journal of Immunology (2005), 61(3), 260-265
CODEN: SJIMAX; ISSN: 0300-9475
PB Blackwell Publishing Ltd.
DT Journal
LA English
CC 15-10 (Immunochemistry)
Section cross-reference(s): 1
AB It has been known that rheumatoid arthritis (RA)-associated antigenic peptides CII263-272 are coupled with human leukocyte antigen (HLA)-DRB1 and recognized by T-cell receptor (TCR), which in turn induced T-cell proliferation and pathogenesis of RA. Non-T-cell-stimulating type II collagen (CII) peptides might be generated by removing the amino acids responsible for TCR contact and keeping the HLA-DR-binding residues intact. In this study, a panel of altered CII peptides (APs) with consecutive or single substitutions of the TCR-contacting residues were synthesized. Through peptide binding and T-cell activation assays, we demonstrated that altered CII263-272 peptides with substitution of the TCR-contacting residues did not or barely induced T-cell activation; one of the best non-T-cell-stimulating peptide AP268-270 inhibited the binding of wild-type CII263-272 to HLA-DR1 and T-cell activation triggered by wild-type CII263-272 and HA306-318 in a dose-response manner. These data suggest that removal of the TCR-contacting residues of CII263-272 leads to HLA-DRB1 binding and low T-cell-stimulating peptides, which could potentially inhibit the T-cell response induced by HLA-DRB1-binding antigenic peptides.
ST collagen II peptide T cell activation immunosuppression HLA
IT Histocompatibility antigens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(HLA-DRB1; inhibitory effect of altered collagen II peptide on HLA-DRB1-restricted T-cell activation)

IT Cell activation
(T cell; inhibitory effect of altered collagen II peptide on HLA-DRB1-restricted T-cell activation)
IT T cell (lymphocyte)
(activation; inhibitory effect of altered collagen II peptide on HLA-DRB1-restricted T-cell activation)
IT Human
Immunosuppressants
Immunosuppression
MHC restriction
Mutagenesis
(inhibitory effect of altered collagen II peptide on HLA-DRB1-restricted T-cell activation)
IT TCR (T cell receptors)
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(inhibitory effect of altered collagen II peptide on HLA-DRB1-restricted T-cell activation)
IT Peptides, biological studies
RL: BSU (Biological study, unclassified); PAC (Pharmacological activity); BIOL (Biological study)
(inhibitory effect of altered collagen II peptide on HLA-DRB1-restricted T-cell activation)
IT Rheumatoid arthritis
(inhibitory effect of altered collagen II peptide on HLA-DRB1-restricted T-cell activation in relation to rheumatoid arthritis)
IT Collagens, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(type II; inhibitory effect of altered collagen II peptide on HLA-DRB1-restricted T-cell activation)
IT 620973-80-0 **620973-82-2** 620973-84-4 620973-86-6
620973-87-7
RL: BSU (Biological study, unclassified); PAC (Pharmacological activity); BIOL (Biological study)
(inhibitory effect of altered collagen II peptide on HLA-DRB1-restricted T-cell activation)
RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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(25) Zhou, Q; Hum Immunol 2003, V4(9), P857

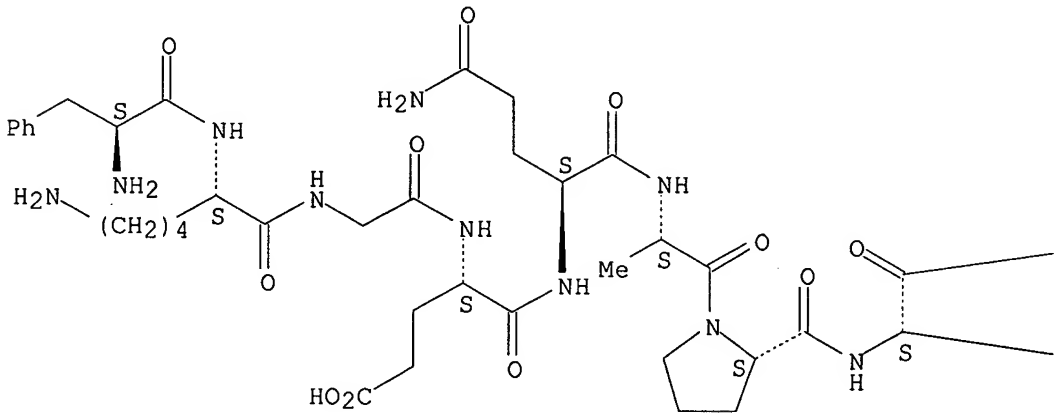
IT **620973-82-2**
RL: BSU (Biological study, unclassified); PAC (Pharmacological activity); BIOL (Biological study)
(inhibitory effect of altered collagen II peptide on HLA-DRB1-restricted T-cell activation)

RN 620973-82-2 HCAPLUS

CN L-Glutamic acid, L-phenylalanyl-L-lysylglycyl-L-α-glutamyl-L-glutaminyl-L-alanyl-L-prolyl-L-lysylglycyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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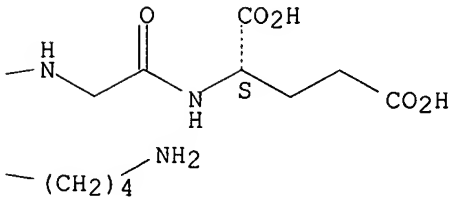

L7 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:958293 HCAPLUS
DN 140:281378
ED Entered STN: 09 Dec 2003
TI Non-T lymphocyte binding peptides derived from collagen type II and uses in treating rheumatoid arthritis
IN **Li, Zhanguo**

PA People's Hospital of Peking University, Peop. Rep. China
SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 20 pp.
CODEN: CNXXEV
DT Patent
LA Chinese
IC ICM C07K0014-435
ICS A61K0038-17; A61P0037-02; A61P0019-02
CC 1-7 (Pharmacology)
Section cross-reference(s): 15
FAN.CNT 1

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PI	CN 1386754	A	20021225	CN 2002-123412	20020627 <--
	WO 2004003007	A1	20040108	WO 2003-CN496	20030626 <--
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	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
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	WO 2003-CN496	W	20030626 <--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
CN 1386754	ICM	C07K0014-435
	ICS	A61K0038-17; A61P0037-02; A61P0019-02
	IPCI	C07K0014-435 [ICM,7]; A61K0038-17 [ICS,7]; A61P0037-02 [ICS,7]; A61P0037-00 [ICS,7,C*]; A61P0019-02 [ICS,7]; A61P0019-00 [ICS,7,C*]
	IPCR	A61K0038-00 [N,A]; A61K0038-00 [N,C*]; C07K0007-00 [I,C*]; C07K0007-06 [I,A]
WO 2004003007	IPCI	C07K0007-06 [ICM,7]; C07K0007-00 [ICM,7,C*]; A61K0038-08 [ICS,7]; A61P0019-02 [ICS,7]; A61P0019-00 [ICS,7,C*]; A61P0037-06 [ICS,7]; A61P0037-00 [ICS,7,C*]
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	ECLA	C07K007/06A
AU 2003280443	IPCI	C07K0007-06 [ICM,7]; C07K0007-00 [ICM,7,C*]; A61K0038-08 [ICS,7]; A61P0019-02 [ICS,7]; A61P0019-00 [ICS,7,C*]; A61P0037-06 [ICS,7]; A61P0037-00 [ICS,7,C*]
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JP 2006508901	IPCI	C07K0007-06 [I,A]; C07K0007-00 [I,C*]; A61P0019-02 [I,A]; A61P0019-00 [I,C*]; A61P0029-00 [I,A]; A61K0038-00 [I,A]
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4C084/ZB152; 4H045/AA10; 4H045/AA30; 4H045/BA15; 4H045/EA20; 4H045/FA20

AB The invention provides the amino acid sequences of 7 non-T lymphocyte binding peptides derived from collagen type II, which contain the consensus sequence and may be recognized only by HLA-DRβ1 but not by T lymphocyte receptors. The non-T lymphocyte binding peptides bind to target consensus sequence QK/RRAA. The invention relates to uses of the non-T lymphocyte binding peptides for treating rheumatoid arthritis. The invention further relates to construction of rat model with CIA collagens induced arthritis and treating CIA with non-T lymphocyte binding peptides.

ST non T lymphocyte binding peptide rheumatoid arthritis therapy; T cell activation HLA DR1 DR4 peptide rheumatoid arthritis

IT Histocompatibility antigens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(HLA-DR1, peptides binding to; non-T lymphocyte binding peptides derived from collagen type II and uses in treating rheumatoid arthritis)

IT Histocompatibility antigens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(HLA-DR4, peptides binding to; non-T lymphocyte binding peptides derived from collagen type II and uses in treating rheumatoid arthritis)

IT Cell activation
(T cell, inhibition of; non-T lymphocyte binding peptides derived from collagen type II and uses in treating rheumatoid arthritis)

IT T cell (lymphocyte)
(activation, inhibition of; non-T lymphocyte binding peptides derived from collagen type II and uses in treating rheumatoid arthritis)

IT Disease models
(collagens induced arthritis; non-T lymphocyte binding peptides derived from collagen type II and uses in treating rheumatoid arthritis)

IT Antirheumatic agents
Rheumatoid arthritis
(non-T lymphocyte binding peptides derived from collagen type II and uses in treating rheumatoid arthritis)

IT Peptides, biological studies
RL: BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(non-T lymphocyte binding peptides derived from collagen type II and uses in treating rheumatoid arthritis)

IT Collagens, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(type II; non-T lymphocyte binding peptides derived from collagen type II and uses in treating rheumatoid arthritis)

IT 620973-81-1 **620973-82-2** 620973-83-3 620973-84-4
620973-85-5 620973-86-6 620973-87-7
RL: BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(non-T lymphocyte binding peptide; non-T lymphocyte binding peptides derived from collagen type II and uses in treating rheumatoid arthritis)

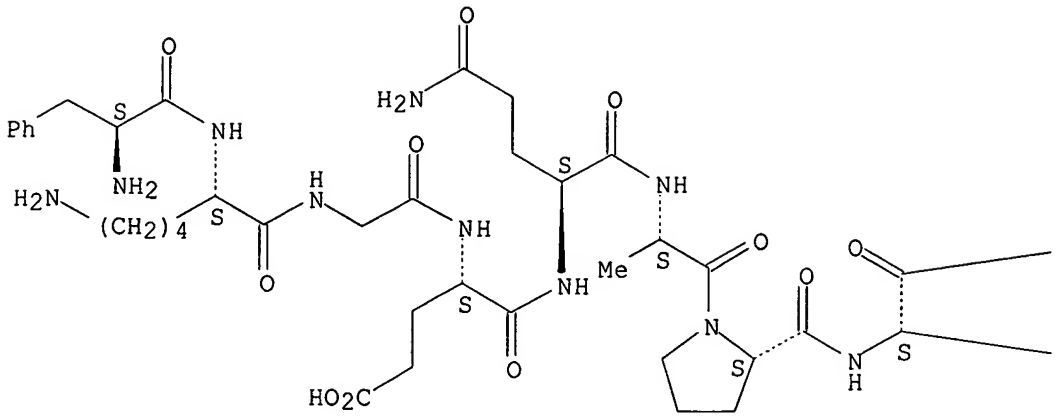
IT **620973-82-2**
RL: BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(non-T lymphocyte binding peptide; non-T lymphocyte binding peptides derived from collagen type II and uses in treating rheumatoid arthritis)

RN 620973-82-2 HCAPLUS

CN L-Glutamic acid, L-phenylalanyl-L-lysylglycyl-L-α-glutamyl-L-glutaminyl-L-alanyl-L-prolyl-L-lysylglycyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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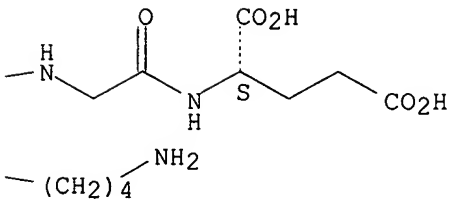

L7 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:668434 HCAPLUS
DN 139:363392
ED Entered STN: 27 Aug 2003
TI Inhibition of T-cell activation with HLA-DR1/DR4 restricted non-T-cell stimulating peptides
AU Zhou, Qiang; Cheng, Yongjing; Lu, Houshan; Zhou, Weihong; **Li, Zhanguo**
CS People's Hospital, Arthritis Research Institute, Department of Rheumatology and Immunology (Q.Z., Y.C., H.L, Z.L.), Peking University Medical School, Beijing, Peop. Rep. China
SO Human Immunology (2003), 64(9), 857-865
CODEN: HUIMDQ; ISSN: 0198-8859
PB Elsevier Science Inc.
DT Journal
LA English
CC 15-8 (Immunochemistry)
AB It has been reported that collagen II (CII) derived peptide CII263-272

induced T-cell activation via its amino acids responsible for T-cell receptor (TCR) recognition. The impact of substitution of the TCR contacting amino acids of CII263-272 on T-cell activation was evaluated using a panel of altered CII263-272 peptides. Computer modeling revealed that the side chains of 263F and 266E in CII263-272 were coupled with amino acids on α1 and β1 chains of HLA-DR1 or -DR4, mainly via hydrogen bonds, whereas the side chains of 267Q and 270K protrude out of the cleft and might be recognized by TCR. Intracellular delivery of the altered peptides, and their binding to HLA-DR1 and -DR4 mols. on cell surface, were demonstrated by confocal microscopy and flow cytometry. The results also revealed that the substitution of 267Q, 268G, 269P, and 270K individually or consecutively by alanine (A) or glycine (G) led to weak or non-T-cell responses. Furthermore, the altered peptides with 270K substitution (270A) or with consecutive substitution of 268G, 269P, and 270K (sub268-270) dramatically inhibited T-cell activation. It is suggested that the altered peptides derived from CII263-272 with substitution of amino acids responsible for TCR contact might be of inhibitory effect on T-cell responses.

ST T cell activation HLA DR1 DR4 peptide rheumatoid arthritis

IT Histocompatibility antigens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(HLA-DR1; T-cell activation inhibition with HLA-DR1/DR4 restricted non-T-cell stimulating peptides derived from collagen type II)

IT Histocompatibility antigens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(HLA-DR4; T-cell activation inhibition with HLA-DR1/DR4 restricted non-T-cell stimulating peptides derived from collagen type II)

IT Structure-activity relationship
(T cell-inhibiting; T-cell activation inhibition with HLA-DR1/DR4 restricted non-T-cell stimulating peptides derived from collagen type II)

IT Peptides, biological studies
TCR (T cell receptors)
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(T-cell activation inhibition with HLA-DR1/DR4 restricted non-T-cell stimulating peptides derived from collagen type II)

IT Human
Rheumatoid arthritis
(T-cell activation inhibition with HLA-DR1/DR4 restricted non-T-cell stimulating peptides derived from collagen type II in relation to rheumatoid arthritis therapy)

IT T cell (lymphocyte)
(activation; T-cell activation inhibition with HLA-DR1/DR4 restricted non-T-cell stimulating peptides derived from collagen type II)

IT Collagens, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(type II; T-cell activation inhibition with HLA-DR1/DR4 restricted non-T-cell stimulating peptides derived from collagen type II)

IT 620973-80-0 620973-81-1 **620973-82-2** 620973-83-3
620973-84-4 620973-85-5 620973-86-6 620973-87-7
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(T-cell activation inhibition with HLA-DR1/DR4 restricted non-T-cell stimulating peptides derived from collagen type II)

RE.CNT 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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(2) Andersson, E; Proc Natl Acad Sci USA 1998, V95, P7574 HCAPLUS
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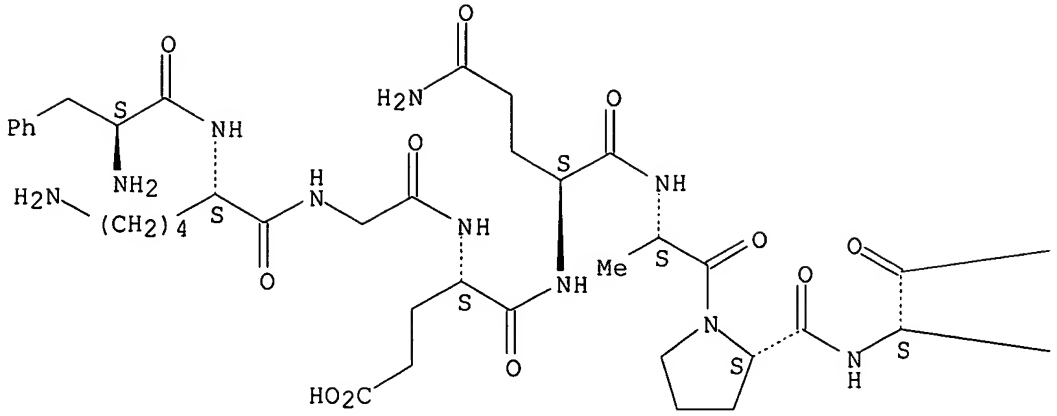
IT **620973-82-2**
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(T-cell activation inhibition with HLA-DR1/DR4 restricted non-T-cell stimulating peptides derived from collagen type II)

RN 620973-82-2 HCAPLUS

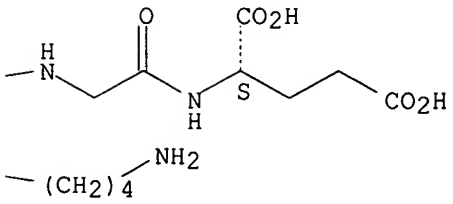
CN L-Glutamic acid, L-phenylalanyl-L-lysylglycyl-L-α-glutamyl-L-glutaminyl-L-alanyl-L-prolyl-L-lysylglycyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B



L7 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:414290 HCAPLUS
DN 129:160544
ED Entered STN: 08 Jul 1998
TI Definition of MHC and T cell receptor contacts in the HLA-DR4-restricted immunodominant epitope in type II collagen and characterization of collagen-induced arthritis in HLA-DR4 and human CD4 transgenic mice
AU Andersson, Ellen Christina; Hansen, Bjarke Endel; Jacobsen, Helle; Madsen, Lars S.; Andersen, Claus B.; Engberg, Jan; Rothbard, Jonathan B.; Sonderstrup McDevitt, Grete; Malmstrom, Vivianne; Holmdahl, Rikard; Svejgaard, Arne; Fugger, Lars
CS Department of Clinical Immunology, Rigshospitalet, Copenhagen, 2200 N, Den.
SO Proceedings of the National Academy of Sciences of the United States of America (1998), 95(13), 7574-7579
CODEN: PNASA6; ISSN: 0027-8424
PB National Academy of Sciences
DT Journal
LA English
CC 15-8 (Immunochemistry)

AB Rheumatoid arthritis (RA) is an autoimmune disease associated with the HLA-DR4 and -DR1 alleles. The target autoantigen(s) in RA is unknown, but type II collagen (CII) is a candidate, and the DR4- and DR1- restricted immunodominant T cell epitope in this protein corresponds to amino acids 261-273 (CII 261-273). The authors have defined MHC and T cell receptor contacts in CII 261-273 and provide strong evidence that this peptide corresponds to the peptide binding specificity previously found for RA-associated DR mols. Moreover, they demonstrate that HLA-DR4 and human CD4 transgenic mice homozygous for the I-Abβ0 mutation are highly susceptible to collagen-induced arthritis and describe the clin. course and histopathol. changes in the affected joints.

ST MHC TCR contact epitope II collagen

IT Histocompatibility antigens
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(HLA-DR1; MHC and TCR receptor contacts in HLA-DR4-restricted immunodominant epitope in type II collagen and characterization of collagen-induced arthritis in HLA-DR4 and human CD4 transgenic mice)

IT Histocompatibility antigens
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(HLA-DR4; MHC and TCR receptor contacts in HLA-DR4-restricted immunodominant epitope in type II collagen and characterization of collagen-induced arthritis in HLA-DR4 and human CD4 transgenic mice)

IT Epitopes
Rheumatoid arthritis
T cell (lymphocyte)
(MHC and TCR receptor contacts in HLA-DR4-restricted immunodominant epitope in type II collagen and characterization of collagen-induced arthritis in HLA-DR4 and human CD4 transgenic mice)

IT CD4 (antigen)
TCR (T cell receptors)
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(MHC and TCR receptor contacts in HLA-DR4-restricted immunodominant epitope in type II collagen and characterization of collagen-induced arthritis in HLA-DR4 and human CD4 transgenic mice)

IT Arthritis
Arthritis
(autoimmune, collagen-induced; MHC and TCR receptor contacts in HLA-DR4-restricted immunodominant epitope in type II collagen and characterization of collagen-induced arthritis in HLA-DR4 and human CD4 transgenic mice)

IT Collagens, biological studies
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(type II; MHC and TCR receptor contacts in HLA-DR4-restricted immunodominant epitope in type II collagen and characterization of collagen-induced arthritis in HLA-DR4 and human CD4 transgenic mice)

IT 175800-89-2 211099-06-8 211099-07-9 211099-08-0 211099-09-1
211099-10-4 211099-11-5 **211099-13-7** 211099-14-8
211099-15-9 211099-16-0 211099-17-1 211099-18-2 211099-19-3
211099-20-6 211099-21-7 211099-22-8 211099-23-9 211099-24-0
RL: PRP (Properties)
(MHC and TCR receptor contacts in HLA-DR4-restricted immunodominant epitope in type II collagen and characterization of collagen-induced arthritis in HLA-DR4 and human CD4 transgenic mice)

RE.CNT 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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(37) Zanelli, E; Proc Natl Acad Sci USA 1996, V93, P1814 HCAPLUS

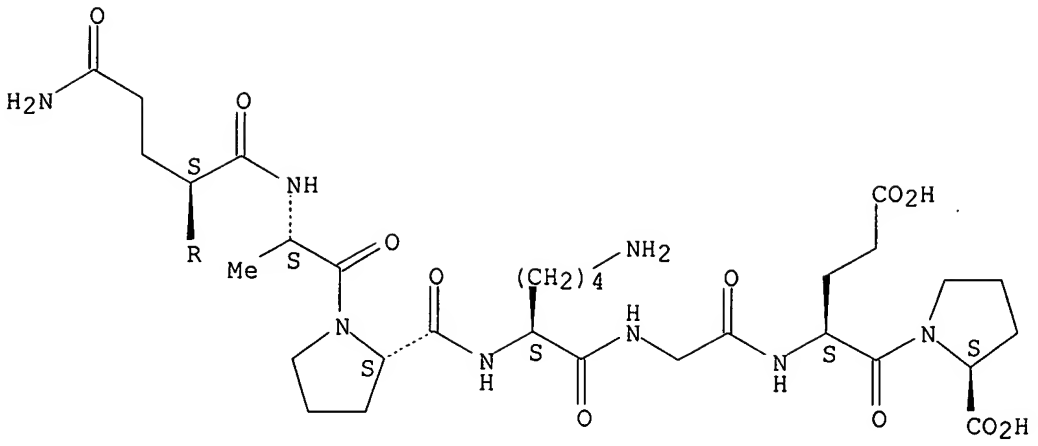
IT **211099-13-7**
RL: PRP (Properties)
(MHC and TCR receptor contacts in HLA-DR4-restricted immunodominant epitope in type II collagen and characterization of collagen-induced arthritis in HLA-DR4 and human CD4 transgenic mice)

RN 211099-13-7 HCAPLUS

CN L-Proline, L-alanylglycyl-L-phenylalanyl-L-lysylglycyl-L-α-glutamyl-L-glutaminyl-L-alanyl-L-prolyl-L-lysylglycyl-L-α-glutamyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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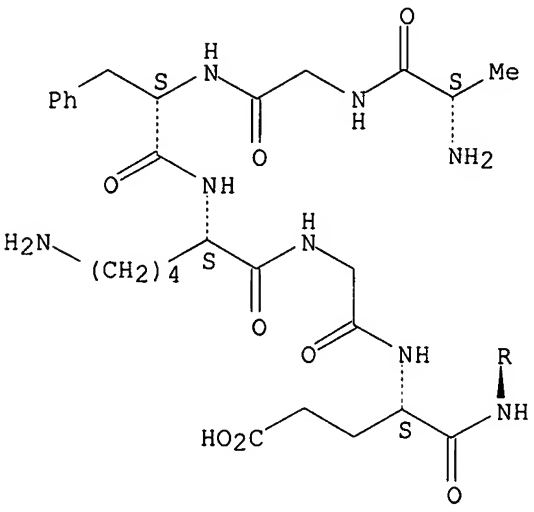

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GenCore version 5.1.9

protein - protein search, using sw model

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Maximum Match 100%
Listing first 45 summaries

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2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

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1	50	92.6	53	2	I60384	gene T1 protein -
2	50	92.6	673	1	CGBO6C	collagen alpha 1(I
3	50	92.6	1418	2	T45467	collagen alpha 1(I
4	50	92.6	1486	1	B40333	collagen alpha 1(I
5	50	92.6	1487	1	CGHU6C	collagen alpha 1(I
6	47	87.0	1419	2	A41182	collagen alpha 1(I
7	47	87.0	1487	2	B41182	collagen alpha 1(I
8	45	83.3	1492	2	A40333	collagen alpha 1'(
9	44	81.5	1496	1	CGHU2V	collagen alpha 2(V
10	44	81.5	1497	2	I49607	procollagen type V
11	39	72.2	817	2	S33793	hypothetical prote
12	39	72.2	2551	2	B98047	hypothetical prote
13	38	70.4	35	2	B24450	collagen alpha 1(V
14	38	70.4	323	2	A47172	transforming growt
15	38	70.4	366	2	S11449	collagen short cha
16	38	70.4	374	1	A42046	surfactant protein
17	38	70.4	375	1	A45225	pulmonary surfacta
18	38	70.4	423	2	A41207	collagen 13, nonfi
19	38	70.4	457	2	G82925	hypothetical prote
20	38	70.4	743	1	S23779	collagen alpha 1(V
21	38	70.4	744	1	A34246	collagen alpha 1(V
22	38	70.4	744	1	S23298	collagen alpha 1(V
23	38	70.4	744	2	S15435	collagen alpha 1(V
24	38	70.4	1752	2	A45407	collagen alpha 3(I
25	37	68.5	160	2	JC2012	ribosomal protein
26	37	68.5	272	2	D36802	IR6 protein - equi
27	37	68.5	395	2	C75170	molybdenum cofacto
28	37	68.5	458	2	S45424	ALG3 protein - yea
29	37	68.5	880	2	E86896	valine-tRNA ligase
30	37	68.5	1388	2	A53317	collagen alpha 1(X
31	36	66.7	89	1	NSBOH7	nonhistone chromos
32	36	66.7	89	2	S11349	nonhistone chromos
33	36	66.7	89	2	S33866	nonhistone chromos
34	36	66.7	90	2	S03700	nonhistone chromos
35	36	66.7	90	2	S01946	nonhistone chromos
36	36	66.7	396	2	T29773	hypothetical prote
37	36	66.7	635	2	A57131	collagen alpha 2(V
38	36	66.7	843	2	T13334	probable tail-host
39	36	66.7	920	2	B34493	collagen alpha 1(I
40	36	66.7	1691	1	CGHU6B	collagen alpha 6(I
41	36	66.7	1838	1	CGHU1V	collagen alpha 1(V
42	36	66.7	1843	2	S18803	collagen alpha 1(V
43	35	64.8	181	2	T13518	hypothetical prote
44	35	64.8	261	2	AB3070	conserved hypothet
45	35	64.8	287	2	T22637	hypothetical prote

ALIGNMENTS

RESULT 1
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gene T1 protein - rat (fragment)
C;Species: Rattus norvegicus (Norway rat)
C;Date: 02-Aug-1996 #sequence_revision 02-Aug-1996 #text_change 31-Dec-2004
C;Accession: I60384
R;Michaelsson, E.; Malmstrom, V.; Reis, S.; Engstrom, A.; Burkhardt, H.; Holmdahl, R.
J. Exp. Med. 180, 745-749, 1994
A;Title: T cell recognition of carbohydrates on type II collagen.
A;Reference number: I60384; MUID:94321934; PMID:8046350
A;Accession: I60384
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-53 <RES>
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C;Genetics:
A;Gene: T1
C;Superfamily: fibrillar collagen carboxyl-terminal homology; von Willebrand factor type

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Db         26 FKGEQGPKGE 35
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collagen alpha 1(II) chain precursor - bovine (tentative sequence) (fragments)
C;Species: Bos primigenius taurus (cattle)
C;Date: 24-Apr-1984 #sequence_revision 17-May-1996 #text_change 09-Jul-2004
C;Accession: A90369; A90396; A92210; S03940; A90189; A05039; A02859
R;Miller, E.J.; Lunde, L.G.
Biochemistry 12, 3153-3159, 1973
A;Title: Isolation and characterization of the cyanogen bromide peptides from the alpha1
A;Reference number: A90369; MUID:73258693; PMID:4732855
A;Contents: composition of CNBr1 and CNBr4
A;Accession: A90369
A;Molecule type: protein
A;Residues: 1-15 <MIL>
A;Cross-references: UNIPROT:P02459; UNIPARC:UPI0000173B79
A;Experimental source: cartilage
A;Note: residues positioned by comparison with human alpha 1(II) chain
R;Butler, W.T.; Miller, E.J.; Finch Jr., J.E.
Biochemistry 15, 3000-3006, 1976
A;Title: The covalent structure of cartilage collagen. Amino acid sequence of the NH-2-te
A;Reference number: A90396; MUID:76253504; PMID:782511
A;Contents: fragments CNBr2 (16-18), CNBr3 (19-21), CNBr6 (22-54), CNBr12 (55-138), and t
A;Accession: A90396
A;Molecule type: protein

Residues: 16-177 <BUT>
Cross-references: UNIPARC:UPI0000173B7A
Experimental source: cartilage
Note: order of CNBr peptides determined
Butler, W.T.; Finch Jr., J.E.; Miller, E.J.
Biol. Chem. 252, 639-643, 1977
Title: The covalent structure of cartilage collagen. Evidence for sequence heterogenei
Reference number: A92210; MUID:77093864; PMID:833147
Accession: A92210
Molecule type: protein
Residues: 139-178,'Z',180-184,'PA',187-190,'AS',193-194,'T',196-198 <BU2>
Cross-references: UNIPARC:UPI0000173B7B
Experimental source: cartilage
Note: a minor, probably nonallelic, alpha 1(II) component has 143-Ala, 164-Leu, and pc
Seyer, J.M.; Hasty, K.A.; Kang, A.H.
ır. J. Biochem. 181, 159-173, 1989
Title: Covalent structure of collagen. Amino acid sequence of an arthritogenic cyanoge
Reference number: S03940; MUID:89231683; PMID:2714276
Accession: S03940
Molecule type: protein
Residues: 139-417 <SEY>
Cross-references: UNIPARC:UPI0000173B7C
Butler, W.T.; Miller, E.J.; Finch Jr., J.E.; Inagami, T.
ochem. Biophys. Res. Commun. 57, 190-195, 1974
Title: Homologous regions of collagen alpha1 (I) and alpha1(II) chains: apparent clust
Reference number: A90189; MUID:74163168; PMID:4857180
Accession: A90189
Molecule type: protein
Residues: 418-492 <BU3>
Cross-references: UNIPARC:UPI0000173B7D
Experimental source: cartilage
Note: the first 75 residues of CNBr8, which follows CNBr11
Sangiorgi, F.O.; Benson-Chanda, V.; de Wet, W.J.; Sobel, M.E.; Ramirez, F.
cleic Acids Res. 13, 2815-2826, 1985
Reference number: A05039; MUID:85215651; PMID:2582365
Accession: A05039
Molecule type: mRNA
Residues: 493-673 <SAN>
Cross-references: UNIPARC:UPI000016C2E1; GB:X02420; NID:g265; PIDN:CAA26269.1; PID:g26
Experimental source: cartilage
Comment: Prolines in the third position of the tripeptide repeating unit (G-X-Y) are h
Comment: Type II collagen molecules are trimers of identical alpha 1(II) chains, genet
e CNBr peptides was determined as 1-4-2-3-6-12-11-8-10-5-9,7-14-15.
Superfamily: collagen alpha 1(I) chain; fibrillar collagen carboxyl-terminal homology;
Keywords: cartilage; coiled coil; extracellular matrix; glycoprotein; hydroxylysine; t
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499-673/Domain: fibrillar collagen carboxyl-terminal homology (fragment) <FCC>
9,102,114,123,189,423,435/Modified site: 5-hydroxylysine (Lys) #status experimental
9,102,114,123,189,423,435/Binding site: carbohydrate (Lys) (covalent) #status experime
574/Binding site: carbohydrate (Asn) (covalent) #status predicted

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1 FKGEQAPKGE 10
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278 FKGEQGPKGE 287

SULT 3
5467
llagen alpha 1(II) chain precursor [imported] - horse
Alternate names: type II collagen
Species: Equus caballus (domestic horse)
Date: 31-Jan-2000 #sequence_revision 31-Jan-2000 #text_change 09-Jul-2004
Accession: T45467
Richardson, D.W.; Dodge, G.R.
bmitted to the EMBL Data Library, June 1996
Description: Cloning of equine type II collagen and modulation of its expression in eq
Reference number: Z22977
Accession: T45467
Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-1418 <RIC>
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C;Superfamily: collagen alpha 1(I) chain; fibrillar collagen carboxyl-terminal homology;

Query Match 92.6%; Score 50; DB 2; Length 1418;
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Db 394 FKGEQGPKGE 403

RESULT 4
B40333
collagen alpha 1(II) chain precursor - African clawed frog
C;Species: Xenopus laevis (African clawed frog)
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 09-Jul-2004
C;Accession: B40333
R;Su, M.W.; Suzuki, H.R.; Bieker, J.J.; Solursh, M.; Ramirez, F.
J. Cell Biol. 115, 565-575, 1991
A;Title: Expression of two nonallelic type II procollagen genes during Xenopus laevis eml
A;Reference number: A40333; MUID:92011898; PMID:1918153
A;Accession: B40333
A;Status: preliminary
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C;Keywords: coiled coil; extracellular matrix; glycoprotein; trimer; triple helix
F;37-96/Domain: von Willebrand factor type C repeat homology <VWC>
F;1258-1486/Domain: fibrillar collagen carboxyl-terminal homology <FCC>

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RESULT 5
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N;Contains: chondrocalcin; collagen alpha 1(II) chain precursor splice form 1; collagen a
C;Species: Homo sapiens (man)
C;Date: 28-May-1986 #sequence_revision 01-Sep-1995 #text_change 31-Dec-2004
C;Accession: A38513; S06715; S24270; A24828; S06496; A35428; A30147; A33116; S64674; S63
7250; I37251; I37252; I37253; I37254; I55338; I59535; I61910
R;Ryan, M.C.; Sieraski, M.; Sandell, L.J.
Genomics 8, 41-48, 1990
A;Title: The human type II procollagen gene: identification of an additional protein-codi
A;Reference number: A38513; MUID:91184811; PMID:2081599
A;Accession: A38513
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A;Residues: 1-103 <RYA>
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:g180884
R;Su, M.W.; Lee, B.; Ramirez, F.; Machado, M.; Horton, W.
Nucleic Acids Res. 17, 9473, 1989
A;Title: Nucleotide sequence of the full length cDNA encoding for human type II procolla
A;Reference number: S06715; MUID:90067946; PMID:2587267
A;Accession: S06715
A;Molecule type: mRNA
A;Residues: 1-28,'R',99-1487 <SU2>
A;Cross-references: UNIPARC:UPI0000126D15; EMBL:X16468; NID:g29515; PIDN:CAA34488.1; PID:
A;Note: alternative splice form 1
R;Vikkula, M.; Metsaeranta, M.; Syvaenen, A.C.; Ala-Kokko, L.; Vuorio, E.; Peltonen, L.
Biochem. J. 285, 287-294, 1992
A;Title: Structural analysis of the regulatory elements of the type-II procollagen gene.

GenCore version 5.1.9

protein - protein search, using sw model

n on: June 23, 2006, 21:05:20 ; Search time 296 Seconds
(without alignments)
31.251 Million cell updates/sec

tle: US-10-519-524-2
rfect score: 54
quence: 1 PKGEQAPKGE 10

oring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

arched: 2849598 seqs, 925015592 residues

tal number of hits satisfying chosen parameters: 2849598

nimum DB seq length: 0
ximum DB seq length: 2000000000

st-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

tabase : UniProt_7.2:*
1: uniprot_sprot:*
2: uniprot_trembl:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

sult No.	Score	% Query Match	Length	DB	ID	Description
1	50	92.6	747	1	CO2A1_BOVIN	P02459 bos taurus
2	50	92.6	1269	2	Q7T2Z7_CHICK	Q7t2z7 gallus gall
3	50	92.6	1418	1	CO2A1_HUMAN	P02458 homo sapien
4	50	92.6	1418	2	Q28396_HORSE	Q28396 equus cabal
5	50	92.6	1418	2	Q9W7R9_CYNPY	Q9w7r9 cynops pyrr
6	50	92.6	1419	1	CO2A1_RAT	P05539 rattus norv
7	50	92.6	1420	2	Q90W37_CHICK	Q90w37 gallus gall
8	50	92.6	1486	2	Q7ZTI6_XENLA	Q7zti6 xenopus lae
9	50	92.6	1486	2	Q91717_XENLA	Q91717 xenopus lae
10	50	92.6	1487	2	Q14047_HUMAN	Q14047 homo sapien
11	50	92.6	1487	2	O77753_CANFA	O77753 canis famil
12	47	87.0	1419	2	Q80VY3_MOUSE	Q80vy3 mus musculu
13	47	87.0	1419	2	Q80X38_MOUSE	Q80x38 mus musculu
14	47	87.0	1442	2	Q62031_MOUSE	Q62031 mus musculu
15	47	87.0	1442	2	Q62033_MOUSE	Q62033 mus musculu
16	47	87.0	1459	1	CO2A1_MOUSE	P28481 mus musculu
17	47	87.0	1459	2	Q62032_MOUSE	Q62032 mus musculu
18	47	87.0	1487	2	Q641K3_MOUSE	Q641k3 mus musculu
19	45	83.3	1491	2	Q7ZTM4_XENLA	Q7ztm4 xenopus lae
20	45	83.3	1491	2	Q91718_XENLA	Q91718 xenopus lae
21	45	83.3	1492	2	Q6P4Z2_XENTR	Q6p4z2 xenopus tro
22	44	81.5	1060	2	Q4SK66_TETNG	Q4sk66 tetraodon n
23	44	81.5	1208	2	Q4RX03_TETNG	Q4rx03 tetraodon n
24	44	81.5	1258	2	Q8AW11_BRARE	Q8aw11 brachydanio
25	44	81.5	1347	2	Q96QB3_HUMAN	Q96qb3 homo sapien
26	44	81.5	1350	2	Q3UTT4_MOUSE	Q3utt4 mus musculu
27	44	81.5	1477	2	Q3TVR2_MOUSE	Q3tvr2 mus musculu
28	44	81.5	1491	2	Q2LDA1_BRARE	Q2lda1 brachydanio
29	44	81.5	1496	1	CO5A2_HUMAN	P05997 homo sapien
30	44	81.5	1496	2	Q53WR4_HUMAN	Q53wr4 homo sapien
31	44	81.5	1497	2	Q3U962_MOUSE	Q3u962 m bone marr
32	44	81.5	1497	2	Q3UHK7_MOUSE	Q3uhk7 mus musculu
33	44	81.5	1497	2	Q3V1J6_MOUSE	Q3v1j6 mus musculu
34	44	81.5	1497	2	Q61431_MOUSE	Q61431 mus musculu
35	44	81.5	1497	2	Q7TMS0_MOUSE	Q7tms0 mus musculu
36	44	81.5	1499	2	Q59IP2_PIG	Q59ip2 sus scrofa
37	44	81.5	1502	2	Q59GR4_HUMAN	Q59gr4 homo sapien
38	43	79.6	270	2	Q6UXZ1_HUMAN	Q6uxz1 homo sapien
39	43	79.6	280	2	Q9D4G8_MOUSE	Q9d4g8 mus musculu
40	43	79.6	283	2	Q8R330_MOUSE	Q8r330 mus musculu
41	43	79.6	357	2	Q7Z4A1_HUMAN	Q7z4a1 homo sapien
42	43	79.6	375	2	Q9CUC3_MOUSE	Q9cuc3 mus musculu
43	43	79.6	387	2	Q8BZZ2_MOUSE	Q8bzz2 mus musculu
44	43	79.6	400	2	Q8N4Z7_HUMAN	Q8n4z7 homo sapien
45	43	79.6	491	2	Q8K299_MOUSE	Q8k299 mus musculu

ALIGNMENTS

RESULT 1
CO2A1_BOVIN
ID CO2A1_BOVIN STANDARD; PRT; 747 AA.
AC P02459; Q28070; Q9XT24;
DT 21-JUL-1986, integrated into UniProtKB/Swiss-Prot.
DT 30-MAY-2000, sequence version 3.
DT 07-FEB-2006, entry version 63.
DE Collagen alpha-1(II) chain precursor (Fragments).
GN Name=COL2A1;
OS Bos taurus (Bovine).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Laurasiatheria; Cetartiodactyla; Ruminantia;
OC Pecora; Bovidae; Bovinae; Bos.
OX NCBI_TaxID=9913;
RN [1]
RP PROTEIN SEQUENCE OF 1-15.
RC TISSUE=Cartilage;
RX MEDLINE=73258693; PubMed=4732855;
RA Miller E.J., Lunde L.G.;
RT "Isolation and characterization of the cyanogen bromide peptides from
RT the alpha 1(II) chain of bovine and human cartilage collagen.";
RL Biochemistry 12:3153-3159(1973).
RN [2]
RP PROTEIN SEQUENCE OF 16-177.
RC TISSUE=Cartilage;
RX MEDLINE=76253504; PubMed=782511;
RA Butler W.T., Miller E.J., Finch J.E. Jr.;
RT "The covalent structure of cartilage collagen. Amino acid sequence of
RT the NH2-terminal helical portion of the alpha 1 (II) chain.";
RL Biochemistry 15:3000-3006(1976).
RN [3]
RP PROTEIN SEQUENCE OF 139-198, AND VARIANTS ALA-143 AND LEU-164.
RC TISSUE=Cartilage;
RX MEDLINE=77093864; PubMed=833147;
RA Butler W.T., Finch J.E. Jr., Miller E.J.;
RT "The covalent structure of cartilage collagen. Evidence for sequence
RT heterogeneity of bovine alpha1(II) chains.";
RL J. Biol. Chem. 252:639-643(1977).
RN [4]
RP PROTEIN SEQUENCE OF 139-417.
RC TISSUE=Cartilage;
RX MEDLINE=89231683; PubMed=2714276;
RA Seyer J.M., Hasty K.A., Kang A.H.;
RT "Covalent structure of collagen. Amino acid sequence of an
RT arthritogenic cyanogen bromide peptide from type II collagen of bovine
RT cartilage.";
RL Eur. J. Biochem. 181:159-173(1989).
RN [5]
RP PROTEIN SEQUENCE OF 418-492, HYDROXYLATION SITES LYS-9; LYS-102;
RP LYS-114; LYS-123; LYS-189; LYS-423 AND LYS-435, AND
RP CARBOHYDRATE-LINKAGE SITES LYS-9; LYS-102; LYS-114; LYS-123; LYS-189;
RP LYS-423 AND LYS-435.
RX MEDLINE=74163168; PubMed=4857180;
RA Butler W.T., Miller E.J., Finch J.E. Jr., Inagami T.;

```
"Homologous regions of collagen alpha1(I) and alpha1(II) chains:
apparent clustering of variable and invariant amino acid residues.";
Biochem. Biophys. Res. Commun. 57:190-195(1974).
[6]
NUCLEOTIDE SEQUENCE [MRNA] OF 138-417.
Brand D.D., Myers L.K., Terato K., Whittington K.B., Stuart J.M.,
Kang A.H., Rosloniec E.F.;
Submitted (OCT-2001) to the EMBL/GenBank/DDBJ databases.
[7]
NUCLEOTIDE SEQUENCE [MRNA] OF 180-272.
TISSUE=Cartilage;
MEDLINE=94194070; PubMed=7511638;
Brand D.D., Myers L.K., Terato K., Whittington K.B., Stuart J.M.,
Kang A.H., Rosloniec E.F.;
"Characterization of the T cell determinants in the induction of
autoimmune arthritis by bovine alpha 1(II)-CB11 in H-2q mice.";
J. Immunol. 152:3088-3097(1994).
[8]
NUCLEOTIDE SEQUENCE [MRNA] OF 417-566.
TISSUE=Cartilage;
MEDLINE=99410731; PubMed=10479530; DOI=10.1006/clim.1999.4755;
Tang B., Chiang T.M., Brand D.D., Gumanovskaya M.L., Stuart J.M.,
Kang A.H., Myers L.K.;
"Molecular definition and characterization of recombinant bovine CB8
and CB10: immunogenicity and arthritogenicity.";
Clin. Immunol. 92:256-264(1999).
[9]
NUCLEOTIDE SEQUENCE [MRNA] OF 567-747.
MEDLINE=85215651; PubMed=2582365;
Sangiorgi F.O., Benson-Chanda V., de Wet W.J., Sobel M.E., Ramirez F.;
"Analysis of cDNA and genomic clones coding for the pro alpha 1 chain
of calf type II collagen.";
Nucleic Acids Res. 13:2815-2826(1985).
-!- FUNCTION: Collagen type II is specific for cartilaginous tissues.
    It is essential for the normal embryonic development of the
    skeleton, for linear growth and for the ability of cartilage to
    resist compressive forces.
-!- SUBUNIT: Homotrimers of alpha 1(II) chains.
-!- PTM: Proline residues at the third position of the tripeptide
    repeating unit (G-X-Y) are hydroxylated in some or all of the
    chains. Hydroxylation on Pro-9 is involved in cross-linking.
-!- PTM: O-linked glycans consist of Glc-Gal disaccharides bound to
    the oxygen atom of post-translationally added hydroxyl groups.
-!- SIMILARITY: Belongs to the fibrillar collagen family.
-----------------------------------------------------------------------
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-----------------------------------------------------------------------
EMBL; L28918; AAA30436.2; -; mRNA.
EMBL; AF138957; AAD42347.1; -; mRNA.
EMBL; X02420; CAA26269.1; -; mRNA.
PIR; A90369; CGBO6C.
PIR; I45876; I45876.
InterPro; IPR008161; Clg_helix.
InterPro; IPR008160; Collagen.
InterPro; IPR000885; Fib_collagen_C.
InterPro; IPR001007; VWF_C.
Pfam; PF01410; COLFI; 1.
Pfam; PF01391; Collagen; 9.
ProDom; PD000007; Clg_helix; 3.
ProDom; PD002078; Fib_collagen_C; 1.
SMART; SM00038; COLFI; 1.
PROSITE; PS01208; VWFC_1; PARTIAL.
Collagen; Direct protein sequencing; Extracellular matrix;
Glycoprotein; Hydroxylation; Polymorphism; Repeat; Structural protein.
CHAIN         1   >566       Collagen alpha-1(II) chain.
                             /FTId=PRO_0000005725.
PROPEP     <567    747       C-terminal propeptide.
                             /FTId=PRO_0000005726.
MOD_RES       9      9       5-hydroxylysine.
MOD_RES     102    102       5-hydroxylysine.
MOD_RES     114    114       5-hydroxylysine.
MOD_RES     123    123       5-hydroxylysine.
MOD_RES     189    189       5-hydroxylysine.
MOD_RES     423    423       5-hydroxylysine.
MOD_RES     435    435       5-hydroxylysine.
CARBOHYD      9      9       O-linked (Gal. . .).
CARBOHYD    102    102       O-linked (Gal. . .).
CARBOHYD    114    114       O-linked (Gal. . .).
CARBOHYD    123    123       O-linked (Gal. . .).
CARBOHYD    189    189       O-linked (Gal. . .).
CARBOHYD    423    423       O-linked (Gal. . .).
CARBOHYD    435    435       O-linked (Gal. . .).
CARBOHYD    648    648       N-linked (GlcNAc. . .) (Potential).
VARIANT     143    143       L -> A (in minor component).
VARIANT     164    164       Q -> L (in minor component).
CONFLICT    179    179       G -> Z (in Ref. 3).
CONFLICT    185    186       AP -> PA (in Ref. 3).
CONFLICT    191    192       EA -> AS (in Ref. 3).
CONFLICT    195    195       T -> Q (in Ref. 4).
CONFLICT    215    215       S -> A (in Ref. 4).
CONFLICT    227    227       T -> A (in Ref. 4).
CONFLICT    251    251       P -> A (in Ref. 4).
CONFLICT    258    258       Q -> T (in Ref. 4).
CONFLICT    261    261       T -> S (in Ref. 4).
CONFLICT    291    293       AGV -> TGP (in Ref. 6).
CONFLICT    329    329       S -> N (in Ref. 6).
CONFLICT    333    333       P -> S (in Ref. 6).
CONFLICT    338    338       I -> L (in Ref. 6).
CONFLICT    344    344       P -> A (in Ref. 6).
CONFLICT    350    354       SPGAV -> PSGLA (in Ref. 6).
CONFLICT    359    363       SPGEA -> ANGDP (in Ref. 6).
CONFLICT    369    369       A -> P (in Ref. 6).
CONFLICT    375    375       K -> R (in Ref. 6).
CONFLICT    492    492       G -> P (in Ref. 5).
NON_CONS    566    567
SEQUENCE   747 AA;  71330 MW;  D0FC1D7CD1CAF77C CRC64;

  Query Match             92.6%;  Score 50;  DB 1;  Length 747;
  Best Local Similarity   90.0%;  Pred. No. 2.7;
  Matches    9;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 FKGEQAPKGE 10
              ||||| ||||
Db        278 FKGEQGPKGE 287


RESULT 2
Q7T2Z7_CHICK
ID   Q7T2Z7_CHICK   PRELIMINARY;   PRT;  1269 AA.
AC   Q7T2Z7;
DT   01-OCT-2003, integrated into UniProtKB/TrEMBL.
DT   01-OCT-2003, sequence version 1.
DT   07-MAR-2006, entry version 12.
DE   Alpha 1 type II procollagen (Fragment).
GN   Name=COL2A1;
OS   Gallus gallus (Chicken).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
OC   Gallus.
OX   NCBI_TaxID=9031;
RN   [1]
RP   NUCLEOTIDE SEQUENCE.
RX   PubMed=16297573;
RA   Xi C., Liu N., Liang F., Guo S., Sun Y., Yang F., Xi Y.;
RT   "Molecular cloning, characterization and localization of chicken type
RT   II procollagen gene.";
RL   Gene 366:67-76(2006).
RN   [2]
RP   NUCLEOTIDE SEQUENCE.
RA   Caixia X., Yongzhi X., Siqi G., Yuying S.;
RT   "Gallus gallus alpha 1 type IIA collagen precursor (COL2A1).";
RL   Submitted (JUN-2003) to the EMBL/GenBank/DDBJ databases.
CC   -----------------------------------------------------------------------
CC   Copyrighted by the UniProt Consortium, see http://www.uniprot.org/terms
CC   Distributed under the Creative Commons Attribution-NoDerivs License
```

GenCore version 5.1.9

protein - protein search, using sw model

n on: June 23, 2006, 21:04:55 ; Search time 200 Seconds
(without alignments)
22.861 Million cell updates/sec

tle: US-10-519-524-2
rfect score: 54
quence: 1 FKGEQAPKGE 10

oring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

arched: 2589679 seqs, 457216429 residues

tal number of hits satisfying chosen parameters: 2589679

nimum DB seq length: 0
ximum DB seq length: 2000000000

st-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

tabase : A_Geneseq_8:*
1: geneseqp1980s:*
2: geneseqp1990s:*
3: geneseqp2000s:*
4: geneseqp2001s:*
5: geneseqp2002s:*
6: geneseqp2003as:*
7: geneseqp2003bs:*
8: geneseqp2004s:*
9: geneseqp2005s:*
10: geneseqp2006s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

sult No.	Score	% Query Match	Length	DB	ID	Description
1	50	92.6	13	2	AAW03105	Aaw03105 Bovine ty
2	50	92.6	13	3	AAY58994	Aay58994 Type II c
3	50	92.6	13	3	AAY82065	Aay82065 Collagen
4	50	92.6	13	4	AAB84108	Aab84108 Amino aci
5	50	92.6	15	3	AAY82066	Aay82066 Collagen
6	50	92.6	16	2	AAW03107	Aaw03107 Bovine ty
7	50	92.6	16	7	ADC21570	Adc21570 Human col
8	50	92.6	16	7	ADC21549	Adc21549 Human col
9	50	92.6	18	7	ADC21600	Adc21600 Human col
10	50	92.6	19	7	ADF14619	Adf14619 Rheumatoi
11	50	92.6	20	4	AAB96873	Aab96873 Rheumatoi
12	50	92.6	27	4	AAB84091	Aab84091 Immunomod
13	50	92.6	28	3	AAB39279	Aab39279 Gene 33 h
14	50	92.6	30	7	ADC21580	Adc21580 Human col
15	50	92.6	31	4	AAB84093	Aab84093 Immunomod
16	50	92.6	33	4	AAB84094	Aab84094 Immunomod
17	50	92.6	33	4	AAB84095	Aab84095 Immunomod
18	50	92.6	33	7	ADC21602	Adc21602 Human col
19	50	92.6	35	7	ADC21601	Adc21601 Human col
20	50	92.6	35	7	ADC21621	Adc21621 Peptide 2
21	50	92.6	37	7	ADC21585	Adc21585 Human col
22	50	92.6	40	7	ADC21605	Adc21605 Human col
23	50	92.6	45	7	ADC21586	Adc21586 Human col
24	50	92.6	48	7	ADC21606	Adc21606 Human col
25	50	92.6	53	2	AAR79479	Aar79479 Human typ
26	50	92.6	53	3	AAB12273	Aab12273 Peptide u
27	50	92.6	53	8	ADR31655	Adr31655 Latent tr
28	50	92.6	133	4	AAU02072	Aau02072 Synthetic
29	50	92.6	220	4	AAU02078	Aau02078 Synthetic
30	50	92.6	279	4	AAB35625	Aab35625 CB11 pept
31	50	92.6	281	4	AAU02079	Aau02079 Synthetic
32	50	92.6	350	4	AAU02076	Aau02076 Synthetic
33	50	92.6	459	4	AAU02077	Aau02077 Synthetic
34	50	92.6	1014	7	ADC21544	Adc21544 Human typ
35	50	92.6	1014	9	AED95251	Aed95251 Mature hu
36	50	92.6	1067	9	AED95261	Aed95261 Dog proco
37	50	92.6	1417	8	ABM83560	Abm83560 Human dia
38	50	92.6	1418	2	AAR59751	Aar59751 Type II c
39	50	92.6	1418	2	AAR71703	Aar71703 Collagen
40	50	92.6	1418	3	AAY96124	Aay96124 Collagen
41	50	92.6	1418	4	AAB35624	Aab35624 Human typ
42	50	92.6	1418	5	AAE16477	Aae16477 Human col
43	50	92.6	1418	5	ABB80735	Abb80735 Collagen
44	50	92.6	1418	5	ABG93927	Abg93927 Human pol
45	50	92.6	1418	5	ABB09627	Abb09627 Amino aci

ALIGNMENTS

RESULT 1
AAW03105
ID AAW03105 standard; peptide; 13 AA.
XX
AC AAW03105;
XX
DT 03-MAR-1997 (first entry)
XX
DE Bovine type II collagen peptide (276-288).
XX
KW Collagen; type II; Bovine; Human; rheumatoid arthritis; epitope;
KW human major histocompatibility complex; genetically linked.
XX
OS Bos taurus.
XX
PN WO9620950-A2.
XX
PD 11-JUL-1996.
XX
PF 04-JAN-1996; 96WO-US000206.
XX
PR 06-JAN-1995; 95US-00369792.
XX
PA (IMMU-) IMMULOGIC PHARM CORP.
XX
PI Rothbard J, Fugger LH, Sonderstrup-Mcdevitt G;
XX
DR WPI; 1996-333937/33.
XX
PT New peptide fragments from human type II collagen - bind to specific
PT major histocompatibility complex proteins and are useful, opt. with known
PT collagen fragments, to treat rheumatoid arthritis.
XX
PS Claim 1; Page 29; 46pp; English.
XX
CC The present invention provides peptides, therapeutic compositions, and
CC methods for treatment of rheumatoid arthritis in mammals, specifically in
CC humans. The peptides of the invention comprise fragments of type II
CC collagen which bind specifically with human major histocompatibility
CC complex proteins known to be genetically linked to susceptibility to
CC rheumatoid arthritis. The therapeutic compositions of the invention
CC comprise the peptides, alone or in combination with other collagen
CC peptides. AAW03105-107 are claimed peptides which can be used to treat
CC rheumatoid arthritis by down-regulating the autoimmune response, esp.
CC rendering T cells non-responsive to the rheumatoid arthritis-related
CC autoantigen

Sequence 13 AA;

Query Match 92.6%; Score 50; DB 2; Length 13;
Best Local Similarity 90.0%; Pred. No. 0.044;
Matches 9; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

1 FKGEQAPKGE 10
||||| ||||
3 FKGEQGPKGE 12

RESULT 2
AAY58994
AAY58994 standard; peptide; 13 AA.

AAY58994;

23-MAY-2000 (first entry)

Type II collagen peptide 261-273.

Collagen; antigen; autoimmune disease; multiple sclerosis; autoimmune haemolytic anaemia; autoimmune oophoritis; autoimmune thyroiditis; colitis; autoimmune uveoretinitis; chronic immune thrombocytopenic purpura; contact sensitivity disease; diabetes mellitus; Graves disease; Guillain-Barre's syndrome; Hashimoto's disease; idiopathic myxedema; myasthenia gravis; psoriasis; pemphigus vulgaris; rheumatoid arthritis; systemic lupus erythematosus; imunosuppressant; neuroprotective; antianaemic; antithyroid; antidiabetic; thyromimetic; antipsoriatic; antirheumatic; antiarthritic; dermatological; antiinflammatory; therapy; major histocompatibility complex; MHC class II; human lymphocyte antigen; HLA-DR.

Unidentified.

WO200005250-A1.

03-FEB-2000.

23-JUL-1999; 99WO-US016747.

23-JUL-1998; 98US-0093859P.
25-SEP-1998; 98US-0101825P.
02-OCT-1998; 98US-0102960P.
12-NOV-1998; 98US-0108184P.
09-MAR-1999; 99US-0123675P.

(YEDA) YEDA RES & DEV CO LTD.
(HARD) HARVARD COLLEGE.

Aharoni R, Teitelbaum D, Arnon R, Sela M, Fridkis-Hareli M; Strominger JL;

WPI; 2000-182641/16.

New terpolymers, copeptides and copolymer 1 which contain three amino acids randomly joined in a linear array where one is aromatic, one is aliphatic and the other is charged, used to treat autoimmune diseases.

Example 11; Page 67; 147pp; English.

The present sequence represents type II collagen peptide 261-273. The peptide was used in the design of copeptides (see AAY58956-88) that show a high affinity for MHC class II proteins associated with an autoimmune disease, especially HLA-DR1, HLA-DR2 or HLA-DR4, bind to antigen presenting cells, and inhibit T cell responses. The copeptides are used to treat multiple sclerosis, autoimmune haemolytic anaemia, autoimmune oophoritis, autoimmune thyroiditis, autoimmune uveoretinitis, chronic immune thrombocytopenic purpura, colitis, contact sensitivity disease, diabetes mellitus, Graves disease, Guillain-Barre's syndrome, Hashimoto's disease, idiopathic myxedema, myasthenia gravis, psoriasis, pemphigus vulgaris, rheumatoid arthritis and systemic lupus erythematosus (all claimed)

SQ Sequence 13 AA;

Query Match 92.6%; Score 50; DB 3; Length 13;
Best Local Similarity 90.0%; Pred. No. 0.044;
Matches 9; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 1 FKGEQAPKGE 10
||||| ||||
Db 3 FKGEQGPKGE 12

RESULT 3
AAY82065
ID AAY82065 standard; peptide; 13 AA.
XX
AC AAY82065;
XX
DT 01-JUN-2000 (first entry)
XX
DE Collagen II (CII) peptide 261-273 SEQ ID NO:2.
XX
KW MHC class II; major histocompatibility complex; autoimmune disease; inflammatory disease; binding; rheumatoid arthritis; antiinflammatory; antiarthritic; multiple sclerosis.
XX
OS Synthetic.
XX
PN WO200005249-A2.
XX
PD 03-FEB-2000.
XX
PF 22-JUL-1999; 99WO-US016617.
XX
PR 23-JUL-1998; 98US-0093859P.
PR 09-MAR-1999; 99US-0123675P.
XX
PA (HARD) HARVARD COLLEGE.
XX
PI Strominger JL, Fridkis-Hareli M;
XX
DR WPI; 2000-205374/18.
XX
PT New synthetic peptide, useful for treating autoimmune disease, e.g.
PT rheumatoid arthritis.
XX
PS Example 1; Page 19; 57pp; English.
XX
CC The present invention describes synthetic peptides having an amino acid
CC sequence comprising at least 3 residues selected from the group of amino
CC acids consisting of aromatic acids, negatively charged amino acids,
CC positively charged amino acids, and aliphatic amino acids, the synthetic
CC peptides being at least 7 amino acid residues in length and capable of
CC binding to a major histocompatibility complex (MHC) class II protein
CC associated with an autoimmune disease. The synthetic peptides have anti-
CC inflammatory and anti-arthritic activities. They are used to treat
CC inflammatory and demyelinating autoimmune diseases, especially rheumatoid
CC arthritis and multiple sclerosis. The peptides are specific for
CC particular MHC Class II alleles. Purified, short and synthetic peptides
CC should have fewer side effects than mixtures of random peptides; may
CC include many repeats of the active sequence and/or contain amino acid
CC analogues that improve stability (or other desired features). AAY82021 to
CC AAY82044 represent specifically claimed peptide sequences which can be
CC used as part of the synthetic peptides of the present invention; AAY82045
CC to AAY82063 represent specifically claimed examples of the synthetic
CC peptides from the present invention; and AAY82064 to AAY82080 represent
CC other peptides used in the exemplification of the present invention
XX
SQ Sequence 13 AA;

Query Match 92.6%; Score 50; DB 3; Length 13;

protein - protein search, using sw model

n on: June 23, 2006, 21:25:52 ; Search time 184 Seconds
(without alignments)
25.175 Million cell updates/sec

tle: US-10-519-524-2
rfect score: 54
quence: 1 FKGEQAPKGE 10

oring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

arched: 2097797 seqs, 463214858 residues

tal number of hits satisfying chosen parameters: 2097797

nimum DB seq length: 0
ximum DB seq length: 2000000000

st-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

tabase : Published_Applications_AA_Main:*
1: /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US07_PUBCOMB.pep:*
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3: /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US09_PUBCOMB.pep:*
4: /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US10A_PUBCOMB.pep:*
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6: /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US11_PUBCOMB.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

sult No.	Score	% Query Match	Length	DB	ID	Description
1	50	92.6	13	3	US-09-768-872-3	Sequence 3, Appli
2	50	92.6	13	4	US-10-438-538-2	Sequence 2, Appli
3	50	92.6	15	4	US-10-438-538-3	Sequence 3, Appli
4	50	92.6	16	4	US-10-194-441A-6	Sequence 6, Appli
5	50	92.6	16	4	US-10-194-441A-27	Sequence 27, Appl
6	50	92.6	18	4	US-10-194-441A-57	Sequence 57, Appl
7	50	92.6	19	5	US-10-503-575-124	Sequence 124, App
8	50	92.6	30	4	US-10-194-441A-37	Sequence 37, Appl
9	50	92.6	33	4	US-10-194-441A-59	Sequence 59, Appl
10	50	92.6	33	4	US-10-194-441A-80	Sequence 80, Appl
11	50	92.6	33	4	US-10-194-441A-87	Sequence 87, Appl
12	50	92.6	35	4	US-10-194-441A-58	Sequence 58, Appl
13	50	92.6	35	4	US-10-194-441A-81	Sequence 81, Appl
14	50	92.6	36	4	US-10-194-441A-78	Sequence 78, Appl
15	50	92.6	37	4	US-10-194-441A-42	Sequence 42, Appl
16	50	92.6	37	4	US-10-194-441A-77	Sequence 77, Appl
17	50	92.6	40	4	US-10-194-441A-62	Sequence 62, Appl
18	50	92.6	40	4	US-10-194-441A-84	Sequence 84, Appl
19	50	92.6	41	4	US-10-194-441A-86	Sequence 86, Appl
20	50	92.6	45	4	US-10-194-441A-43	Sequence 43, Appl
21	50	92.6	48	4	US-10-194-441A-63	Sequence 63, Appl
22	50	92.6	48	4	US-10-194-441A-79	Sequence 79, Appl
23	50	92.6	60	6	US-11-202-057-15	Sequence 15, Appl
24	50	92.6	492	4	US-10-639-286-11	Sequence 11, Appl
25	50	92.6	1014	4	US-10-194-441A-1	Sequence 1, Appli
26	50	92.6	1017	4	US-10-639-286-10	Sequence 10, Appl
27	50	92.6	1418	4	US-10-058-124-20	Sequence 20, Appl
28	50	92.6	1418	4	US-10-468-091-5	Sequence 5, Appli
29	50	92.6	1487	5	US-10-756-149-4739	Sequence 4739, Ap
30	50	92.6	1487	6	US-11-202-057-3	Sequence 3, Appli
31	50	92.6	1487	6	US-11-202-057-5	Sequence 5, Appli
32	50	92.6	1487	6	US-11-202-057-7	Sequence 7, Appli
33	47	87.0	1014	4	US-10-194-441A-48	Sequence 48, Appl
34	47	87.0	1487	4	US-10-468-091-6	Sequence 6, Appli
35	44	81.5	1496	4	US-10-177-293-70	Sequence 70, Appl
36	44	81.5	1496	4	US-10-301-822-35	Sequence 35, Appl
37	44	81.5	1496	4	US-10-236-031B-74	Sequence 74, Appl
38	44	81.5	1496	4	US-10-468-091-22	Sequence 22, Appl
39	44	81.5	1496	4	US-10-788-792-248	Sequence 248, App
40	44	81.5	1496	5	US-10-287-436A-500	Sequence 500, App
41	44	81.5	1496	5	US-10-287-436A-589	Sequence 589, App
42	44	81.5	1496	5	US-10-287-436A-1194	Sequence 1194, Ap
43	44	81.5	1496	6	US-11-186-284-35	Sequence 35, Appl
44	44	81.5	1497	4	US-10-468-091-23	Sequence 23, Appl
45	43	79.6	27	5	US-10-496-905-472	Sequence 472, App

ALIGNMENTS

RESULT 1
US-09-768-872-3
; Sequence 3, Application US/09768872
; Patent No. US20020055466A1
; GENERAL INFORMATION:
; APPLICANT: Aharoni, Rina
; APPLICANT: Teitelbaum, Dvora
; APPLICANT: Arnon, Ruth
; APPLICANT: Sela, Michael
; APPLICANT: Fridkis-Harelli, Masha
; APPLICANT: Strominger, Jack
; TITLE OF INVENTION: Treatment of Autoimmune Conditions with Copolymer 1
; TITLE OF INVENTION: and Related Copolymers and Peptides
; FILE REFERENCE: 1662/493762
; CURRENT APPLICATION NUMBER: US/09/768,872
; CURRENT FILING DATE: 2001-01-23
; PRIOR APPLICATION NUMBER: US 60/093,859
; PRIOR FILING DATE: 1998-07-23
; PRIOR APPLICATION NUMBER: US 60/101,825
; PRIOR FILING DATE: 1998-09-25
; PRIOR APPLICATION NUMBER: US 60/102,960
; PRIOR FILING DATE: 1998-10-02
; PRIOR APPLICATION NUMBER: US 60/106,350
; PRIOR FILING DATE: 1998-10-30
; PRIOR APPLICATION NUMBER: US 60/108,184
; PRIOR FILING DATE: 1998-11-12
; PRIOR APPLICATION NUMBER: US 60/123,675
; PRIOR FILING DATE: 1999-03-09
; NUMBER OF SEQ ID NOS: 3
; SOFTWARE: WordPerfect 8.0 for Windows
; SEQ ID NO 3
; LENGTH: 13
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: synthetic peptide (CII amino acids 261-273)
US-09-768-872-3

Query Match 92.6%; Score 50; DB 3; Length 13;
Best Local Similarity 90.0%; Pred. No. 0.035;
Matches 9; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 1 FKGEQAPKGE 10
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Db 3 FKGEQGPKGE 12

RESULT 2
US-10-438-538-2
; Sequence 2, Application US/10438538

Publication No. US20040006022A1
GENERAL INFORMATION:
APPLICANT: Strominger, Jack L.
APPLICANT: Fridkis-Hareli, Masha
TITLE OF INVENTION: Synthetic Peptides and Methods of use for Autoimmune
TITLE OF INVENTION: Disease Therapies
FILE REFERENCE: 24655-013DIV2
CURRENT APPLICATION NUMBER: US/10/438,538
CURRENT FILING DATE: 2003-05-15
PRIOR APPLICATION NUMBER: 09/359,099
PRIOR FILING DATE: 1999-07-22
PRIOR APPLICATION NUMBER: 60/093,859
PRIOR FILING DATE: 1998-07-23
PRIOR APPLICATION NUMBER: 60/123,675
PRIOR FILING DATE: 1999-03-09
NUMBER OF SEQ ID NOS: 59
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 2
LENGTH: 13
TYPE: PRT
ORGANISM: Homo sapiens collagen II
}-10-438-538-2

Query Match 92.6%; Score 50; DB 4; Length 13;
Best Local Similarity 90.0%; Pred. No. 0.035;
Matches 9; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

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3 FKGEQGPKGE 12

SULT 3
}-10-438-538-3
Sequence 3, Application US/10438538
Publication No. US20040006022A1
GENERAL INFORMATION:
APPLICANT: Strominger, Jack L.
APPLICANT: Fridkis-Hareli, Masha
TITLE OF INVENTION: Synthetic Peptides and Methods of use for Autoimmune
TITLE OF INVENTION: Disease Therapies
FILE REFERENCE: 24655-013DIV2
CURRENT APPLICATION NUMBER: US/10/438,538
CURRENT FILING DATE: 2003-05-15
PRIOR APPLICATION NUMBER: 09/359,099
PRIOR FILING DATE: 1999-07-22
PRIOR APPLICATION NUMBER: 60/093,859
PRIOR FILING DATE: 1998-07-23
PRIOR APPLICATION NUMBER: 60/123,675
PRIOR FILING DATE: 1999-03-09
NUMBER OF SEQ ID NOS: 59
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 3
LENGTH: 15
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: Description of Artificial Sequence:Synthetic
OTHER INFORMATION: peptide of predetermined sequence for testing of
OTHER INFORMATION: activity in MHC Class II assays, control collagen
OTHER INFORMATION: II bracketed by alanine residues.
FEATURE:
NAME/KEY: SITE
LOCATION: (1)..(15)
}-10-438-538-3

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Best Local Similarity 90.0%; Pred. No. 0.04;
Matches 9; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

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4 FKGEQGPKGE 13

RESULT 4
US-10-194-441A-6
; Sequence 6, Application US/10194441A
; Publication No. US20030148944A1
; GENERAL INFORMATION:
; APPLICANT: Holmdahl, Rikard
; APPLICANT: Engstrom, Jan Ake
; APPLICANT: Kihlberg, Jan
; APPLICANT: Burkhardt, Harald
; TITLE OF INVENTION: TRIPLE POLYPEPTIDE COMPLEXES
; FILE REFERENCE: 11145-010001
; CURRENT APPLICATION NUMBER: US/10/194,441A
; CURRENT FILING DATE: 2002-07-11
; PRIOR APPLICATION NUMBER: US 60/305,048
; PRIOR FILING DATE: 2001-07-12
; NUMBER OF SEQ ID NOS: 87
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 6
; LENGTH: 16
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-194-441A-6

Query Match 92.6%; Score 50; DB 4; Length 16;
Best Local Similarity 90.0%; Pred. No. 0.043;
Matches 9; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

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Db 5 FKGEQGPKGE 14

RESULT 5
US-10-194-441A-27
; Sequence 27, Application US/10194441A
; Publication No. US20030148944A1
; GENERAL INFORMATION:
; APPLICANT: Holmdahl, Rikard
; APPLICANT: Engstrom, Jan Ake
; APPLICANT: Kihlberg, Jan
; APPLICANT: Burkhardt, Harald
; TITLE OF INVENTION: TRIPLE POLYPEPTIDE COMPLEXES
; FILE REFERENCE: 11145-010001
; CURRENT APPLICATION NUMBER: US/10/194,441A
; CURRENT FILING DATE: 2002-07-11
; PRIOR APPLICATION NUMBER: US 60/305,048
; PRIOR FILING DATE: 2001-07-12
; NUMBER OF SEQ ID NOS: 87
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 27
; LENGTH: 16
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Synthetic
; FEATURE:
; NAME/KEY: MOD_RES
; LOCATION: 15
; OTHER INFORMATION: hydroxyproline
US-10-194-441A-27

Query Match 92.6%; Score 50; DB 4; Length 16;
Best Local Similarity 90.0%; Pred. No. 0.043;
Matches 9; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 1 FKGEQAPKGE 10
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Db 5 FKGEQGPKGE 14

RESULT 6

GenCore version 5.1.9

protein - protein search, using sw model

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10.384 Million cell updates/sec

tle: US-10-519-524-2
rfect score: 54
quence: 1 FKGEQAPKGE 10

oring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

arched: 99297 seqs, 22845552 residues

tal number of hits satisfying chosen parameters: 99297

nimum DB seq length: 0
ximum DB seq length: 2000000000

st-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

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8: /EMC_Celerra_SIDS3/ptodata/1/pubpaa/US60_NEW_PUB.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

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1	50	92.6	13	7	US-11-298-718-1	Sequence 1, Appli
2	50	92.6	13	7	US-11-298-718-40	Sequence 40, Appl
3	50	92.6	27	7	US-11-298-718-23	Sequence 23, Appl
4	50	92.6	31	7	US-11-298-718-25	Sequence 25, Appl
5	50	92.6	33	7	US-11-298-718-26	Sequence 26, Appl
6	45	83.3	14	7	US-11-261-429-25	Sequence 25, Appl
7	45	83.3	32	7	US-11-298-718-27	Sequence 27, Appl
8	38	70.4	744	6	US-10-505-928-493	Sequence 493, App
9	35	64.8	1366	6	US-10-985-570-3	Sequence 3, Appli
10	35	64.8	1466	6	US-10-985-570-1	Sequence 1, Appli
11	34	63.0	370	6	US-10-471-571A-5028	Sequence 5028, Ap
12	33	61.1	259	6	US-10-953-349-16938	Sequence 16938, A
13	33	61.1	289	6	US-10-953-349-16937	Sequence 16937, A
14	33	61.1	292	6	US-10-449-902-31422	Sequence 31422, A
15	33	61.1	324	6	US-10-471-571A-430	Sequence 430, App
16	33	61.1	366	6	US-10-449-902-47117	Sequence 47117, A
17	33	61.1	377	6	US-10-449-902-53595	Sequence 53595, A
18	33	61.1	385	6	US-10-953-349-16936	Sequence 16936, A
19	33	61.1	487	6	US-10-449-902-54259	Sequence 54259, A
20	33	61.1	542	6	US-10-471-571A-4844	Sequence 4844, Ap
21	33	61.1	679	6	US-10-449-902-43110	Sequence 43110, A
22	32	59.3	220	6	US-10-449-902-46725	Sequence 46725, A
23	32	59.3	224	6	US-10-449-902-37715	Sequence 37715, A
24	32	59.3	251	6	US-10-953-349-35951	Sequence 35951, A
25	32	59.3	260	6	US-10-953-349-13883	Sequence 13883, A
26	32	59.3	290	6	US-10-449-902-31197	Sequence 31197, A
27	32	59.3	290	6	US-10-449-902-54573	Sequence 54573, A
28	32	59.3	335	6	US-10-449-902-56163	Sequence 56163, A
29	32	59.3	356	6	US-10-449-902-55629	Sequence 55629, A
30	32	59.3	390	6	US-10-471-571A-1618	Sequence 1618, Ap
31	32	59.3	480	6	US-10-449-902-44467	Sequence 44467, A
32	32	59.3	571	6	US-10-449-902-50485	Sequence 50485, A
33	32	59.3	621	7	US-11-293-697-3069	Sequence 3069, Ap
34	32	59.3	674	6	US-10-449-902-50138	Sequence 50138, A
35	32	59.3	717	6	US-10-505-928-438	Sequence 438, App
36	32	59.3	883	7	US-11-297-383-11	Sequence 11, Appl
37	32	59.3	1279	6	US-10-449-902-53956	Sequence 53956, A
38	31.5	58.3	254	6	US-10-953-349-14195	Sequence 14195, A
39	31.5	58.3	295	6	US-10-953-349-14194	Sequence 14194, A
40	31.5	58.3	364	6	US-10-953-349-14193	Sequence 14193, A
41	31	57.4	96	6	US-10-449-902-34935	Sequence 34935, A
42	31	57.4	178	6	US-10-953-349-6151	Sequence 6151, Ap
43	31	57.4	187	6	US-10-953-349-31496	Sequence 31496, A
44	31	57.4	213	6	US-10-953-349-31495	Sequence 31495, A
45	31	57.4	239	6	US-10-953-349-24974	Sequence 24974, A

ALIGNMENTS

RESULT 1
US-11-298-718-1
; Sequence 1, Application US/11298718
; Publication No. US20060088544A1
; GENERAL INFORMATION:
; APPLICANT: Zimmerman, Daniel
; TITLE OF INVENTION: PEPTIDE CONSTRUCTS FOR TREATMENT OF AUTOIMMUNE AND HGV CONDITIONS
; FILE REFERENCE: CS-111
; CURRENT APPLICATION NUMBER: US/11/298,718
; CURRENT FILING DATE: 2005-12-12
; PRIOR APPLICATION NUMBER: US/10/111,645
; PRIOR FILING DATE: 2002-04-26
; NUMBER OF SEQ ID NOS: 52
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 1
; LENGTH: 13
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: peptide construct
US-11-298-718-1

Query Match 92.6%; Score 50; DB 7; Length 13;
Best Local Similarity 90.0%; Pred. No. 0.0012;
Matches 9; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

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Qy          1 FKGEQAPKGE 10
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Db          4 FKGEQGPKGE 13
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RESULT 2
US-11-298-718-40
; Sequence 40, Application US/11298718
; Publication No. US20060088544A1
; GENERAL INFORMATION:
; APPLICANT: Zimmerman, Daniel
; TITLE OF INVENTION: PEPTIDE CONSTRUCTS FOR TREATMENT OF AUTOIMMUNE AND HGV CONDITIONS
; FILE REFERENCE: CS-111
; CURRENT APPLICATION NUMBER: US/11/298,718
; CURRENT FILING DATE: 2005-12-12
; PRIOR APPLICATION NUMBER: US/10/111,645
; PRIOR FILING DATE: 2002-04-26
; NUMBER OF SEQ ID NOS: 52
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 40
; LENGTH: 13
; TYPE: PRT

ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: peptide construct
:-11-298-718-40

Query Match 92.6%; Score 50; DB 7; Length 13;
Best Local Similarity 90.0%; Pred. No. 0.0012;
Matches 9; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

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4 FKGEQGPKGE 13

:SULT 3
:-11-298-718-23
Sequence 23, Application US/11298718
Publication No. US20060088544A1
GENERAL INFORMATION:
APPLICANT: Zimmerman, Daniel
TITLE OF INVENTION: PEPTIDE CONSTRUCTS FOR TREATMENT OF AUTOIMMUNE AND HGV CONDITIONS
FILE REFERENCE: CS-111
CURRENT APPLICATION NUMBER: US/11/298,718
CURRENT FILING DATE: 2005-12-12
PRIOR APPLICATION NUMBER: US/10/111,645
PRIOR FILING DATE: 2002-04-26
NUMBER OF SEQ ID NOS: 52
SOFTWARE: PatentIn version 3.1
SEQ ID NO 23
LENGTH: 27
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: peptide construct
:-11-298-718-23

Query Match 92.6%; Score 50; DB 7; Length 27;
Best Local Similarity 90.0%; Pred. No. 0.0025;
Matches 9; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

1 FKGEQAPKGE 10
||||| ||||
18 FKGEQGPKGE 27

:SULT 4
:-11-298-718-25
Sequence 25, Application US/11298718
Publication No. US20060088544A1
GENERAL INFORMATION:
APPLICANT: Zimmerman, Daniel
TITLE OF INVENTION: PEPTIDE CONSTRUCTS FOR TREATMENT OF AUTOIMMUNE AND HGV CONDITIONS
FILE REFERENCE: CS-111
CURRENT APPLICATION NUMBER: US/11/298,718
CURRENT FILING DATE: 2005-12-12
PRIOR APPLICATION NUMBER: US/10/111,645
PRIOR FILING DATE: 2002-04-26
NUMBER OF SEQ ID NOS: 52
SOFTWARE: PatentIn version 3.1
SEQ ID NO 25
LENGTH: 31
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: peptide construct
:-11-298-718-25

Query Match 92.6%; Score 50; DB 7; Length 31;
Best Local Similarity 90.0%; Pred. No. 0.0029;
Matches 9; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

1 FKGEQAPKGE 10
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Db 22 FKGEQGPKGE 31

RESULT 5
US-11-298-718-26
; Sequence 26, Application US/11298718
; Publication No. US20060088544A1
; GENERAL INFORMATION:
; APPLICANT: Zimmerman, Daniel
; TITLE OF INVENTION: PEPTIDE CONSTRUCTS FOR TREATMENT OF AUTOIMMUNE AND HGV CONDITIONS
; FILE REFERENCE: CS-111
; CURRENT APPLICATION NUMBER: US/11/298,718
; CURRENT FILING DATE: 2005-12-12
; PRIOR APPLICATION NUMBER: US/10/111,645
; PRIOR FILING DATE: 2002-04-26
; NUMBER OF SEQ ID NOS: 52
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 26
; LENGTH: 33
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: peptide construct
US-11-298-718-26

Query Match 92.6%; Score 50; DB 7; Length 33;
Best Local Similarity 90.0%; Pred. No. 0.0031;
Matches 9; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 1 FKGEQAPKGE 10
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Db 24 FKGEQGPKGE 33

RESULT 6
US-11-261-429-25
; Sequence 25, Application US/11261429
; Publication No. US20060115899A1
; GENERAL INFORMATION:
; APPLICANT: Buckner, Jane H.
; APPLICANT: Walker, Mindi R.
; TITLE OF INVENTION: METHODS OF GENERATING ANTIGEN-SPECIFIC CD4+CD25+ REGULATORY T
; TITLE OF INVENTION: CELLS, COMPOSITIONS AND METHODS OF USE
; FILE REFERENCE: BRIVM-1-26413
; CURRENT APPLICATION NUMBER: US/11/261,429
; CURRENT FILING DATE: 2005-10-28
; PRIOR APPLICATION NUMBER: US 60/623,380
; PRIOR FILING DATE: 2004-10-29
; NUMBER OF SEQ ID NOS: 65
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 25
; LENGTH: 14
; TYPE: PRT
; ORGANISM: Homo Sapiens
US-11-261-429-25

Query Match 83.3%; Score 45; DB 7; Length 14;
Best Local Similarity 88.9%; Pred. No. 0.011;
Matches 8; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 1 FKGEQAPKG 9
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Db 6 FKGEQGPKG 14

RESULT 7
US-11-298-718-27
; Sequence 27, Application US/11298718
; Publication No. US20060088544A1
; GENERAL INFORMATION:
; APPLICANT: Zimmerman, Daniel
; TITLE OF INVENTION: PEPTIDE CONSTRUCTS FOR TREATMENT OF AUTOIMMUNE AND HGV CONDITIONS
; FILE REFERENCE: CS-111

GenCore version 5.1.9

protein - protein search, using sw model

n on: June 23, 2006, 21:13:50 ; Search time 52 Seconds
(without alignments)
16.833 Million cell updates/sec

tle: US-10-519-524-2
rfect score: 54
quence: 1 FKGEQAPKGE 10

oring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

arched: 650591 seqs, 87530628 residues

tal number of hits satisfying chosen parameters: 650591

nimum DB seq length: 0
ximum DB seq length: 2000000000

st-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

tabase : Issued_Patents_AA:*
1: /EMC_Celerra_SIDS3/ptodata/2/iaa/5_COMB.pep:*
2: /EMC_Celerra_SIDS3/ptodata/2/iaa/6_COMB.pep:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

sult No.	Score	% Query Match	Length	DB	ID	Description
1	50	92.6	13	2	US-10-111-645A-1	Sequence 1, Appli
2	50	92.6	13	2	US-10-111-645A-40	Sequence 40, Appl
3	50	92.6	13	5	PCT-US96-00206-2	Sequence 2, Appli
4	50	92.6	16	5	PCT-US96-00206-4	Sequence 4, Appli
5	50	92.6	27	2	US-10-111-645A-23	Sequence 23, Appl
6	50	92.6	31	2	US-10-111-645A-25	Sequence 25, Appl
7	50	92.6	33	2	US-10-111-645A-26	Sequence 26, Appl
8	50	92.6	53	1	US-08-316-650-10	Sequence 10, Appl
9	50	92.6	53	2	US-08-479-722B-10	Sequence 10, Appl
10	50	92.6	53	2	US-09-592-685-10	Sequence 10, Appl
11	50	92.6	53	5	PCT-US95-02251-10	Sequence 10, Appl
12	50	92.6	279	2	US-09-010-999-2	Sequence 2, Appli
13	50	92.6	492	2	US-08-468-996-11	Sequence 11, Appl
14	50	92.6	1017	2	US-08-468-996-10	Sequence 10, Appl
15	50	92.6	1060	2	US-08-931-820-3	Sequence 3, Appli
16	50	92.6	1418	2	US-08-963-825-20	Sequence 20, Appl
17	50	92.6	1418	2	US-09-010-999-1	Sequence 1, Appli
18	50	92.6	1418	2	US-09-500-811-20	Sequence 20, Appl
19	50	92.6	1418	2	US-09-570-573-20	Sequence 20, Appl
20	50	92.6	1418	2	US-09-548-608-20	Sequence 20, Appl
21	47	87.0	1442	1	US-08-316-650-12	Sequence 12, Appl
22	47	87.0	1442	5	PCT-US95-02251-12	Sequence 12, Appl
23	45	83.3	32	2	US-10-111-645A-27	Sequence 27, Appl
24	41	75.9	1739	2	US-09-795-061-2	Sequence 2, Appli
25	39	72.2	9	2	US-08-159-339A-816	Sequence 816, App
26	39	72.2	10	2	US-08-159-339A-833	Sequence 833, App
27	39	72.2	13	5	PCT-US96-00206-3	Sequence 3, Appli
28	39	72.2	22	1	US-08-521-871A-5	Sequence 5, Appli
29	39	72.2	26	1	US-07-951-565-1	Sequence 1, Appli
30	39	72.2	26	1	US-07-951-565-6	Sequence 6, Appli
31	39	72.2	26	1	US-08-246-242-9	Sequence 9, Appli
32	39	72.2	26	2	US-08-425-175D-5	Sequence 5, Appli
33	39	72.2	26	5	PCT-US96-00206-1	Sequence 1, Appli
34	38	70.4	26	2	US-08-425-175D-3	Sequence 3, Appli
35	38	70.4	375	2	US-09-600-932-29	Sequence 29, Appl
36	38	70.4	744	2	US-09-949-016-9607	Sequence 9607, Ap
37	37	68.5	159	2	US-09-732-210-832	Sequence 832, App
38	37	68.5	291	2	US-09-902-540-13879	Sequence 13879, A
39	37	68.5	752	2	US-10-104-047-1975	Sequence 1975, Ap
40	36	66.7	78	2	US-09-621-976-4720	Sequence 4720, Ap
41	36	66.7	90	2	US-09-397-787-17	Sequence 17, Appl
42	36	66.7	120	2	US-09-949-016-8529	Sequence 8529, Ap
43	36	66.7	120	2	US-09-949-016-9471	Sequence 9471, Ap
44	36	66.7	123	2	US-09-949-016-10319	Sequence 10319, A
45	36	66.7	259	2	US-09-006-353A-2	Sequence 2, Appli

ALIGNMENTS

RESULT 1
US-10-111-645A-1
; Sequence 1, Application US/10111645A
; Patent No. 6995237
; GENERAL INFORMATION:
; APPLICANT: Zimmerman, Daniel
; TITLE OF INVENTION: PEPTIDE CONSTRUCTS FOR TREATMENT OF AUTOIMMUNE AND HGV CONDITIONS
; FILE REFERENCE: CS-111
; CURRENT APPLICATION NUMBER: US/10/111,645A
; CURRENT FILING DATE: 2002-04-26
; NUMBER OF SEQ ID NOS: 52
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 1
; LENGTH: 13
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: peptide construct
US-10-111-645A-1

Query Match 92.6%; Score 50; DB 2; Length 13;
Best Local Similarity 90.0%; Pred. No. 0.029;
Matches 9; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

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Qy          1 FKGEQAPKGE 10
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Db          4 FKGEQGPKGE 13
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RESULT 2
US-10-111-645A-40
; Sequence 40, Application US/10111645A
; Patent No. 6995237
; GENERAL INFORMATION:
; APPLICANT: Zimmerman, Daniel
; TITLE OF INVENTION: PEPTIDE CONSTRUCTS FOR TREATMENT OF AUTOIMMUNE AND HGV CONDITIONS
; FILE REFERENCE: CS-111
; CURRENT APPLICATION NUMBER: US/10/111,645A
; CURRENT FILING DATE: 2002-04-26
; NUMBER OF SEQ ID NOS: 52
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 40
; LENGTH: 13
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: peptide construct
US-10-111-645A-40

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Query Match             92.6%;  Score 50;  DB 2;  Length 13;
Best Local Similarity   90.0%;  Pred. No. 0.029;
Matches    9;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

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          4 FKGEQGPKGE 13


SULT 3
T-US96-00206-2
Sequence 2, Application PC/TUS9600206
 GENERAL INFORMATION:
   APPLICANT:  ImmuLogic Pharmaceutical Corporation
   TITLE OF INVENTION:  COMPOSITIONS AND METHODS FOR
   TITLE OF INVENTION:  TREATING RHEUMATOID ARTHRITIS
   NUMBER OF SEQUENCES:  7
   CORRESPONDENCE ADDRESS:
     ADDRESSEE:  Lappin & Kusmer
     STREET:  200 State Street
     CITY:  Boston
     STATE:  MA
     COUNTRY:  USA
     ZIP:  02109
   COMPUTER READABLE FORM:
     MEDIUM TYPE:  Floppy disk
     COMPUTER:  IBM PC compatible
     OPERATING SYSTEM:  PC-DOS/MS-DOS
     SOFTWARE:  PatentIn Release #1.0, Version #1.25
   CURRENT APPLICATION DATA:
     APPLICATION NUMBER:  PCT/US96/00206
     FILING DATE:
     CLASSIFICATION:
   ATTORNEY/AGENT INFORMATION:
     NAME:  Kerner, Ann-Louise
     REGISTRATION NUMBER:  33,523
     REFERENCE/DOCKET NUMBER:  IMZ-014PCT
   TELECOMMUNICATION INFORMATION:
     TELEPHONE:  617-466-6000
     TELEFAX:  617-466-6040
 INFORMATION FOR SEQ ID NO:  2:
   SEQUENCE CHARACTERISTICS:
     LENGTH:  13 amino acids
     TYPE:  amino acid
     TOPOLOGY:  linear
   MOLECULE TYPE:  peptide
   FRAGMENT TYPE:  internal
   ORIGINAL SOURCE:
     ORGANISM:  Bos taurus type II collagen
T-US96-00206-2

Query Match             92.6%;  Score 50;  DB 5;  Length 13;
Best Local Similarity   90.0%;  Pred. No. 0.029;
Matches    9;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

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          3 FKGEQGPKGE 12


SULT 4
T-US96-00206-4
Sequence 4, Application PC/TUS9600206
 GENERAL INFORMATION:
   APPLICANT:  ImmuLogic Pharmaceutical Corporation
   TITLE OF INVENTION:  COMPOSITIONS AND METHODS FOR
   TITLE OF INVENTION:  TREATING RHEUMATOID ARTHRITIS
   NUMBER OF SEQUENCES:  7
   CORRESPONDENCE ADDRESS:
     ADDRESSEE:  Lappin & Kusmer
     STREET:  200 State Street
     CITY:  Boston
     STATE:  MA
     COUNTRY:  USA
     ZIP:  02109
   COMPUTER READABLE FORM:
     MEDIUM TYPE:  Floppy disk
     COMPUTER:  IBM PC compatible
     OPERATING SYSTEM:  PC-DOS/MS-DOS
     SOFTWARE:  PatentIn Release #1.0, Version #1.25
   CURRENT APPLICATION DATA:
     APPLICATION NUMBER:  PCT/US96/00206
     FILING DATE:
     CLASSIFICATION:
   ATTORNEY/AGENT INFORMATION:
     NAME:  Kerner, Ann-Louise
     REGISTRATION NUMBER:  33,523
     REFERENCE/DOCKET NUMBER:  IMZ-014PCT
   TELECOMMUNICATION INFORMATION:
     TELEPHONE:  617-466-6000
     TELEFAX:  617-466-6040
 INFORMATION FOR SEQ ID NO:  4:
   SEQUENCE CHARACTERISTICS:
     LENGTH:  16 amino acids
     TYPE:  amino acid
     TOPOLOGY:  linear
   MOLECULE TYPE:  peptide
   FRAGMENT TYPE:  internal
   ORIGINAL SOURCE:
     ORGANISM:  Bos taurus type II collagen
PCT-US96-00206-4

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  Best Local Similarity   90.0%;  Pred. No. 0.036;
  Matches    9;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

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Db          6 FKGEQGPKGE 15


RESULT 5
US-10-111-645A-23
; Sequence 23, Application US/10111645A
; Patent No. 6995237
; GENERAL INFORMATION:
;  APPLICANT: Zimmerman, Daniel
;  TITLE OF INVENTION: PEPTIDE CONSTRUCTS FOR TREATMENT OF AUTOIMMUNE AND HGV CONDITIONS
;  FILE REFERENCE: CS-111
;  CURRENT APPLICATION NUMBER: US/10/111,645A
;  CURRENT FILING DATE:  2002-04-26
;  NUMBER OF SEQ ID NOS: 52
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 23
;   LENGTH: 27
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: peptide construct
US-10-111-645A-23

  Query Match             92.6%;  Score 50;  DB 2;  Length 27;
  Best Local Similarity   90.0%;  Pred. No. 0.059;
  Matches    9;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

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Db         18 FKGEQGPKGE 27


RESULT 6
US-10-111-645A-25
; Sequence 25, Application US/10111645A
; Patent No. 6995237
; GENERAL INFORMATION:
;  APPLICANT: Zimmerman, Daniel
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